AG RESEARCH
SPOTLIGHT

MARIO **FERRUZZI**

"As the analytical tools get better, the questions get more complex and deep."

—Mario Ferruzzi, Professor of Food Science and Nutrition Science

The Ag Research Spotlight shines each month on an individual whose work reflects our commitment to the six strategic themes that guide Agricultural Research at Purdue. Our spotlight for October 2012 underscores the theme, "People enhancing food and health."

THE RESEARCHER: As an undergraduate chemistry major at Duke Univeristy, Mario Ferruzzi found summer employment with the North Carolina State University Seafood Laboratory. There he learned a little about food processing and found application for his basic science. After completing his doctorate in Food Science and Nutrition at The Ohio State University in 2001, Ferruzzi worked for Nestlé, first in Ohio and then at the company's Research Center in Switzerland. When he joined the Purdue faculty in 2004, he brought industry-focused relevance to his research. Food science is a disipline that exists in a university because of its stakeholders, the food industry and consumers, he says.

THE RESEARCH: Ferruzzi's research focuses on two main classes of plant-derived compounds, polyphenols and natural pigments (carotenoids and chlorophylls), that are associated with human health benefits. His team wants to understand how these compounds are distributed in the food supply and how they get from the food into our bodies (bioavailability). He further explores how they react to food formulation and processing, how they are delivered to the consumer, and ultimately how the human body utilizes them.

APPLICATIONS: Understanding how food delivers health-promoting compounds and what the body does with them can lead to improved recommendations for consumers. A second purpose has to do with the design, validation and implementation of food products. "Our application point is to guide the development of food products to optimize the way the body uses these foods," Ferruzzi says. "We want to help the industry mature and grow with sound science."

TOOLS OF THE TRADE: "Technology is critical. You can ask the questions, but you have to have the tools to answer them. I couldn't do it without the complex analytical systems I have available to me in my lab and more broadly at Purdue."

ADAPTATION: In the current funding environment, Ferruzzi believes he must continually adapt his research to maintain both relevance and competitiveness. Working with colleagues at Purdue's International Food Technology Center, for example, he has been studying products made with bio-fortified maize and sorghum targeted to at-risk consumers in developing countries. "I've been very fortunate in this work to have had tremendous collaborators," he says. "Eight years ago, I never imagined working in foods for developing countries. Now it's an exciting part of what I might be able to do long term."

Photo: Matthew Prebst (left) and Mario Ferruzzi (right) seperate milk proteins in the lab.